



(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/055204 A1

(51) International Patent Classification⁷: **G10L 19/14**,
19/08, 19/10

(NL). RIERA PALOU, Felip [ES/NL]; c/o Prof. Holst-
laan 6, NL-5656 AA Eindhoven (NL).

(21) International Application Number:
PCT/IB2004/052539

(74) Agents: SLENDERS, Petrus, J., W. et al.; Prof. Holstlaan
6, NL-5656 AA Eindhoven (NL).

(22) International Filing Date:
24 November 2004 (24.11.2004)

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03104472.0 1 December 2003 (01.12.2003) EP

(71) Applicant (*for all designated States except US*): KONIN-
KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

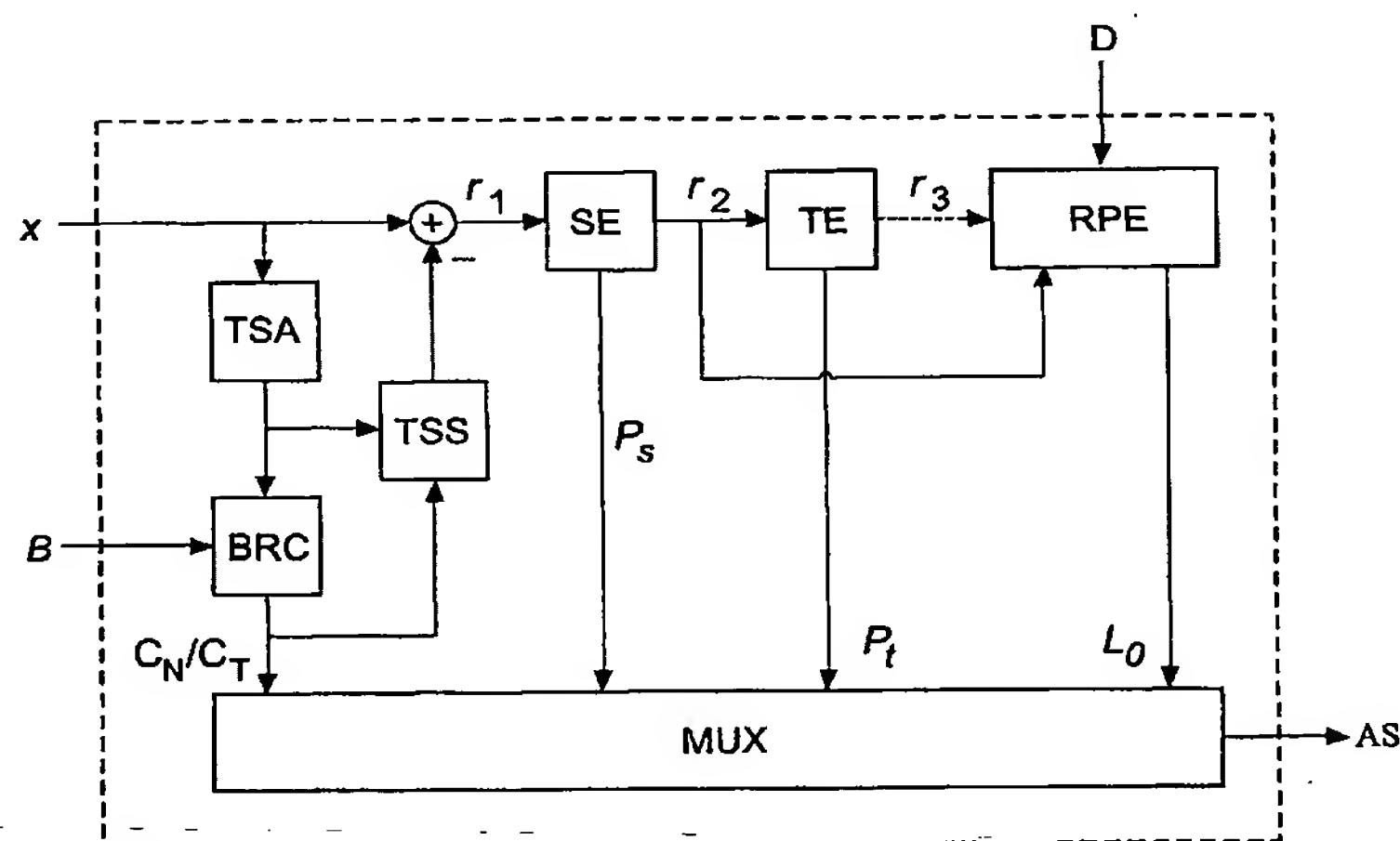
(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): GERRITS, An-
dreas, J. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656
AA Eindhoven (NL). DEN BRINKER, Albertus, C.
[NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven

[Continued on next page]

(54) Title: AUDIO CODING



(57) Abstract: An audio coder is arranged to process a respective set of sampled signal values for each of a plurality of sequential segments of an audio signal (x). The coder comprises an analyser (TSA) arranged to analyse the sampled signal values to provide one or more sinusoidal codes (Cs) corresponding to respective sinusoidal components of the audio signal. A subtractor subtracts a signal corresponding to the sinusoidal components from the audio signal to provide a first residual signal (r₁). A modeller (SEG) models the frequency spectrum of the first residual signal (r₁) by determining first filter parameters (P_s) of a filter which has a frequency response approximating a frequency spectrum of the first residual signal. Another subtractor subtracts a signal corresponding to the first filter parameters from the first residual signal to provide a second residual signal (r₂). Another modeller (RPE) models a component (r₂, r₃) of the second residual signal with a pulse train coder (RPE) to provide respective pulse train parameters (L₀). A bit stream generator (15) generates an encoded audio stream (AS) including the sinusoidal codes (Cs), the first filter parameters (P_s) and the pulse train parameters (L₀).



Declaration under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ,*

BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.